



#### ABSTRACT

This invention relates generally to methods and apparatus for desorption and ionization of analytes for the purpose of subsequent scientific analysis by such methods, for example, as mass spectrometry or biosensors. More specifically, this invention relates to the field of mass spectrometry, especially to the type of matrix-assisted laser desorption/ionization, time-of-flight mass spectrometry used to analyze macromolecules, such as proteins or biomolecules. Most specifically, this invention relates to the sample probe geometry, sample probe composition, and sample probe surface chemistries that enable the selective capture and desorption of analytes, including intact macromolecules, directly from the probe surface into the gas (vapor) phase without added chemical matrix.